Leslie Haddon and Roger Silverstone

Information and communication technologies and everyday life: individual and social dimensions

Book section

Chapter 10

Information and Communication Technologies and Everyday Life: Individual and Social Dimensions

Leslie Haddon and Roger Silverstone

In recent years a body of qualitative and case study research has begun to accumulate showing that users, consumers and citizens are not just passive recipients of technology but actively engage in defining and giving meaning to Information and Communication Technologies (ICTs). A central theme of this work is that ICTs only become meaningful in use; they are socially shaped.[1] Only through the meanings that are constructed by producers, by those who market or regulate them and by those who consume them do they have any significance. ICTs mean different things to different people; and meanings will change and often they will conflict. For these reasons, a number of underlying themes will inform our analysis:

- *ICTs are seen as both objects and media*: ICTs are doubly articulated into everyday life as machines and media of information, pleasure, communication,
- *ICTs are seen as material and symbolic objects*: ICTs are bought and used not just for what they can do but for what they stand for, aesthetically, in claiming social status, or in claiming membership of a group or sub-culture.
- *ICTs are embedded in time and space*: the consumption and use of ICTs influences, and is influenced by, location in time and space. Globally, they connect and disconnect. Locally, they can raise flexibility and control.

- *ICTs involve users both actively and passively*: users can increasingly interact with ICTs, but even the "passive" use involves choices and discrimination
- *ICTs shift boundaries between public and private spaces*: ICTs provide new opportunities for citizenship and for surveillance, new opportunities for networking but also increased isolation.

These relationships are multiple and dynamic, operating both inside and outside the home, and historically, as well as sociologically, economically and culturally. Without a mature and sociologically sensitive understanding of the present we will mistake the future. However, on the basis of the pioneering analyses analyzed below we might finally manage to avoid the traps of the utopian or dystopian thinking that still dominates many business, policy and popular discourses.[2]

The speed and scale of household adoption of ICTs

It is important to realize just how long it takes for ICTs to become fundamentally and unproblematically integrated into our lives. Recent research on the current young elderly notes how they were the first phone generation. Many experienced the arrival of the telephone at an early stage in their life, often first encountering it at work, and as a result they became entirely comfortable with it at home (Haddon and Silverstone 1996a). Many of their own parents, those we might call the older elderly, however, are often still not totally at ease with the phone, even though they may have used it much of their adult lives. They have not the relatively developed and relaxed phone manner of their children not do they use it in as many ways.

More medium and short term changes can be seen in inelasticities of spending and time use. A recent Belgian study shows how in the medium term there is only a limited re-distribution of the spending of household income across broad categories of goods and services (Punie 1995).[3] For example, between 1980 and 1992, spending on clothes and food, alcohol and tobacco was slightly down, while durables, leisure and telecommunication expenditure rose. In the shorter term there is considerable

inelasticity that means that new goods or services have to compete for the household budget. Punie takes the UK experience with CDs to illustrate what this inelasticity can mean for particular product. Although CDs have successfully ousted records, no increase took place in audio-related spending. Moreover, since CDs are more expensive than records, people acquired fewer of them and had smaller audio collections.

The Belgian research also charts changes in the domestic time budget. Despite rises in overall leisure time over the last 30 years, the ratio of time spent at home or outside has remained remarkably constant at around 60:40. This finding should make us wary of claims (or fears) that we are becoming increasingly home-centered and that home-centered activities will dominate our time in the future. Instead there is a substitution effect. People find new reasons for going out and making social contact. The study discovered less time spent at the theatre, cinema, and football matches but more on holidays, outings and going to restaurants and cafes. As with the spending of income, we may change the details of how we organize our lives and the technologies and services we use may change in the medium term. But the underlying broad patterns of living do not radically alter so readily.

More evidence relevant to questions about the speed and degree of take-up of domestic ICTs comes from the penetration patterns of the technologies that have found their way into the home. Only occasionally does a product experience a startling short-term success. Examples, such as the radio boom of the 1920s and the PC boom of early 1980s, were significantly related to the symbolic nature of these products. More commonly, even successful ICTs like the CD or the VCR take over a decade to go from launch to mass market. While, teleshopping and telebanking have been around for at least that long without achieving a mass-market breakthrough.

Furthermore, changes in the practices of everyday life often linger behind the mere acquisition of new technologies. ICTs have to find a place in the routines and rhythms of the home environment. Generally, we are often slow to change such habits, including our

habits of media and communication use (Thrall 1982, Silverstone 1995). For example, it took over a decade for most people to switch from the habit of watching one TV channel all evening to more frequently switching from channel to channel (Dutton 1995). This suggests real problems for new media like interactive TV, or new communications technologies such as video telephony, because they entail significantly new behaviour (cf. Silverstone and Haddon 1996).

In the 1980s a number of writers evaluated claims on whether an "Information Revolution" was leading us to a totally new "Information Society" (Winston 1989, Winner 1989, Lyon 1988). They pointed out that in many respects technological change, adoption and its consequences were neither as rapid nor as radical as the term "revolutionary" implied. Current evidence on ICTs in the home would support the caution such writers were showing, especially in the short to medium term.

The symbolic nature of ICTs and the process of domestication

There is a growing literature on the consumption of goods and services in general (Bourdieu 1986, Douglas and Isherwood 1980, Featherstone 1991, McCracken 1990, Miller 1987). These focus on the significance of food, clothes, furniture, or domestic architecture for identity, lifestyle and taste. We may "need" food and clothes to sustain our bodies, but when we make particular choices between goods there is often much more involved than just considerations of physical survival. Such insights have more rarely been applied to technologies or ICTs, although histories of the early years of now familiar technologies discuss this symbolic dimension.[4]

One approach to these issues considers innovation as a process of "domestication" (Silverstone et al 1992, Silverstone 1994b, Lie and Sorenson 1996). The household initially confronts new ICTs as strange and maybe even frightening. The process of acceptance (and indeed resistance) is a matter of making the new technologies familiar. They must be accommodated within the complex structures and patterns of everyday life inside and outside the home. This process may involve some degree of negotiation or

even conflict amongst household members over spending priorities or the control over the spaces and times of the household. In crossing the threshold and as they become integrated into the domestic culture of the family the meanings of ICTs change. Of course, the arrival of a new ICT might be wholly or partially resisted. Some people continue to feel ill at ease with the role of television in their life or in that of their children. They can be wary of letting in any more equipment that could threaten to increase the amount of TV watching, such as cable, VCR or the second TV. Similarly, there are fears of "addiction" to interactive video games and the Internet use. Particular technologies, perhaps above all the PC, are far from being domesticated. The PC is innately complex and tests the skill and competence of households.

Once ICTs in the home, the further process of their domestication involves choosing where to put them and how to use them. This relates to aesthetic considerations or to strategies for displaying technologies as well as functional requirements. For example teleworkers might arrange their equipment to show that they are serious workers (Haddon and Silverstone 1993).

The location of ICTs in the home may also reflect strategies to control them. The placing of the telephone, or the television, in shared or private spaces has consequences for who uses them and how. The daily and weekly pattern of use through is equally significant. Broadcast schedules divide up the day providing temporal markers for home-based lone parents and the elderly (Randell 1995). TV watching can be a pass-time. On other occasions time has to be set aside from other obligations to use ICTs. It is therefore important to appreciate how consumption involves other household members; some with more power than others, formulating rules about access and use. Who is allowed to use the PC and under what conditions? Is there a limit to TV watching? How much the phone is used and what are "unnecessary" calls? Of course such rules may be broken or resisted. Teenagers may commandeer the phone or illicitly view banned horror films. In other words, the home is a place with its own moral economy, but a moral economy that is often contested

and subject to renegotiation.[5] It is in this setting that ICTs are placed and given meaning.

It is clear that there is a range of questions to ask about the consumption of ICTs beyond their "usefulness", questions that actually address their social and symbolic significance. Policy and market makers too should be aware of that ICTs have a double life, and that the social world is not a neutral space across which technologies and services pass without change and resistance. The recent history of the home computer boom, and the failure of home automation technologies across Europe to take off, offer revealing, if rather different, examples of how social factors intrude into the innovation process.[6] The example of the home computer illustrates how in practice wider media and institutional discourses and policies can have a significant bearing on the fate of new ICTs. Meanwhile home automation provides a good example of a product being developed in an area already rich in symbolism, and where the images influence the product's development and reception. Moreover, images are contested. There is not necessarily one single or dominant discourse.[7] Crucial battles have to be fought over this world of public images. Both producers and policy makers need to be sensitive to this dimension in their presentations, announcements, documents, promotional activities, demonstration projects and general contact with the media. In addition to monitoring sales figures or surveys of usage, attention also needs to be given to this whole question of symbolism, such as, sudden and perhaps unexpected public concerns.[8]

ICTs and perceptions of reality and identity

The history of technological innovation, especially that of ICTs, is one of anxiety and concern as well as of hope and expectation. The present generation of ICTs is no exception. Contemporary concerns focus on three discrete but interrelated areas: social isolation, addiction and influence. They are interrelated by a common theme that sees in technology a dehumanization: a threat to the comfortable and necessary familiarities of face to face interaction, and of the ability to control through the measure of

lived experience our relationship to the world and to other people in it. Indeed research on media innovation throughout the century has been driven by concerns about the vulnerability of individuals and as societies to media control.

Isolation

Concerns have re-emerged about the effects of ICTs on our relationships with each other and our participation in the family and wider social life. New risks of isolation result from a withdrawal from participation in public space (for example by teleworkers) or for those who by virtue of age or disability are vulnerable to isolation and marginalisation.

Ithiel de Sola Pool's (1977) description of the double life of technology in his discussion of the telephone is clearly important here. He recognized that the phone both had the power both to connect and disconnect - to bring people together electronically while maintaining the distance between them. All ICTs have this double life. Recent research on teleworkers (Haddon and Silverstone 1993, Huws 1993) and the elderly (Haddon and Silverstone 1995) has shown how ICTs mediate social life. They both isolate and compensate for that isolation, e.g. the elderly use the phone both to maintain links with dispersed relatives. Social life also mediates the effects of technology, for example those who feel more isolated as a result of their involvement with IT may compensate by reinforcing or developing social networks (in the family, neighborhood, friendship or through work).

There are similar concerns for the family as a whole. The arrival of multiple TV sets and video recorders, not to mention the radio, the Walkman and the music center, has encouraged many commentators (e.g. Young 1990) to bewail the resulting social fragmentation and dislocation. It is obvious that such technological individuation is significant, enabling household members to control their own media spaces and to create private worlds of media consumption and electronic communication. For example, parents worry their children's exposure to TV content and use of the phone. But are ICTs undermining family life? Research suggests that such fears are exaggerated.

The history of the mass media, and especially of television, depicts the media as providing a hearth for the family (Frith 1983, Scannell and Cardiff 1991). Even the dispersion that follows from owning multiple TV sets may be functional, for example by enabling teenagers to "leave" the family safely (Morley and Silverstone 1990). Also with the arrival of a new dominant set connected to satellite or cable (Moores 1993) the family hearth is recreated. It is also important to point out that there are more fundamental and powerful forces affecting family life, such as unemployment and changing social values and moralities. These need to be taken into account before a balanced conclusion about the effects of new ICTs can be reached.

Addiction

Each new media innovation brings fears of addiction, as some early adopters and users become completely obsessed. There will always be a ready flow of examples, particularly of children (television addicts, computer addicts). A substantial body of research explores these issues and offers evidence that addiction is both common and harmful (Winn 1977). Yet there is a fine line between creativity and addiction (Silverstone 1994b), and the intense relations even with supposedly passive media, suggest that such relationships can creative (Turkle 1984, Fiske 1987, Ang 1985). Also people who develop such relationships are likely to have had equally intense involvement in other activities (Shotton 1989). Perhaps, it is a truism to point out that while ICTs can offer intensely seductive worlds, only a few particularly vulnerable individuals are unable to control their relationship to them.

Influence

There has been a long history of concerns over ICTs effects on our perceptions of the world. For example, how violence on television might influence children's behaviour, how computer games might distort our sense of reality, how computers might change our perceptions of what it is to be human. However, the methodological problems to be overcome in order to isolate television as an independent variable have proved to be almost

insuperable. Considerations of the context of use, the time scale of influence, the nature and definition of television violence, the complex nature of narrative and performance, the differences between real and fictional representation, as well as the definition of what can be considered violent social behaviour, all contribute to a research problem that has yet to be conclusively resolved and may never be (Cumberbatch and Howitt 1988).

Interesting and important research on the long-term effects of certain kinds of representations has been conducted in the United States (Gerbner at al. 1986). But the findings have not been replicated elsewhere and the confidence with which researchers have claimed that heavy users of television have a different, distorted and often more anxious view of the world than light viewers has been widely criticized (Morgan and Signiorelli 1990). Elsewhere, some contemporary thinking has moved beyond a concern with specific effects of media, in relation to violence or pornography for example, to a concern with a media engendered hyper-reality of multiple simulations. The increasingly pervasive mass media are seen by these writers (see Baudrillard 1983) as replacing a world of lived experience, offering in its stead an infinity of refracted symbols isolating all who consume media from any other reality.

ICTs in the household

Gender and ICTs

The household is a complex and differentiated social and cultural, as well as an economic and political, environment. This complexity ramifies still further once attention turns to the differences related to gender, age, health and impairment. One particularly strong demonstration of how ICTs can become gendered and how men and women experience them differently has been provided by feminist research has provided a range of analyses.

These differences emerge in the consumption as well as production of ICTs. Innovation is not just a matter of engineering. The design of a new technology involves a whole range of actors

in defining the intended characteristics of a new technology or service (Silverstone and Haddon 1996). Hardware designers, industrial designers, marketers and advertisers, software publishers, content and service providers, magazines retailers and distributors contribute to the final, but still contested, meaning of a new ICT (Cawson et al 1995, Silverstone and Haddon 1993). At all these levels we find examples of actors giving particular gender connotations to ICTs (Cockburn 1992).

Research has examined the ways in which gendered images of potential end-users inform the innovation process. Specifically it has considered the extent to which women's interests are considered in their specification and design (Berg 1990) and shown how much design assumes a male user. This can relate to the strength required to operate a technology (Cockburn 1992), to the technical knowledge that it is assumed the end user possesses and to the genres and modes of action in software, such as interactive games (Skirrow 1986, Haddon 1993). ICTs can also acquire meaning from the places where they are located. For example the first public interactive games machines were in public arcades which are male-dominated locales (Haddon 1993). Analysis has become increasingly subtle, discussing both the ambivalence and the ambiguities in the design and content. They also allow for the fact that the gender connotations of technologies can and do become modified over time. One can point to the recent advertising campaign in the UK in which British Telecom attempted (apparently with some success) to persuade men to use the phone more like women have been shown to do. This suggests that public education, as well design related policies, could allow women to engage more freely with new technologies and services. However gender bias is not exclusive to production and to design. Considerable research, originally based on the study of the use of television in the home has illustrated the extent of male appropriation of ICTs (Morley 1986). This can be seen by and large as an expression of traditional male and female roles and responsibilities. Many writers point out that women are still more likely to take on the main responsibility for housework and child care, and hence while home can be more of a site of leisure for

men it is a site of work for women (Gray 1992). This has a variety of ramifications. Much of women's attention when viewing TV is more fragmented as they simultaneously go about other jobs (Morley 1986). They can feel guiltier when indulging themselves in the consumption of programs (Morley 1986, Gray 1992). When acquiring ICTs a key consideration is how it is going to help with everyday pressures (Meyer and Schultz 1995). Also, women find it harder to justify time spent experimenting, or "playing", with new ICTs such as computers (Haddon 1990). In fact, some studies have indicated how women have been wary of getting involved in some ICTs, like operating the VCR, in case it lead to them ending up with yet more work recording items for other people (Gray 1992). The main case where women have been favorably disposed to a communications medium is the telephone (Martin 1988, Rakow 1988, Moyal 1989). Here, women's conventional responsibility for maintaining family links and social circles is a key reason for acceptance.

It is clear from research (Cowan 1989, Wacjman 1991, Haddon and Silverstone 1996b) that there are fundamental aspects to the inequalities of gender in the family. Both the control over and the quality of space and time have been seen as having significant implications for women. Haddon and Silverstone (1996b) have discussed the notion of *temporal capital* as a way of identifying time as a crucial resource in the management of everyday life. It is clear that there are not only differences in the amount and quality of time which households can mobilize, but that both amounts and quality of "free –time" are profoundly gendered. Similar differences can be seen in access to and control over space, perhaps most dramatically in the comparison of male and female teleworkers (Haddon and Silverstone 1993)

It is possible to see how the household superimposes new meanings on the public definitions of ICTs. In so far as the moral economy of a household is structured through gender difference, ICTs have to be fitted in and consumed in accordance with existing routines and rituals, responsibilities and conflicts. At one level, the implications are difficult to assess, since there is a strand of feminist writing which has been very critical of the ways in

which males are often assumed enthusiastically to embrace technology and technical change (McNeil 1987). On the other hand, there have also been numerous concerns about women and girls being "left behind" in terms of emerging forms of ICT literacy. While the gender processes that occur in the home are less addressable by state policy compared to those around production, sensitivity to how domestic consumption is shaped may at least inform policies to make ICTs more accessible.

ICTs and Age

The young elderly

Many of the current generation of young elderly (aged 60-74) have taken early retirement (Laczko 1989, Laczko and Phillipson 1991) As many have accumulated savings and will benefit from occupational pensions increasing numbers of young elderly are relatively economically comfortable. Some are experiencing a decline in physical strength that can make them feel more vulnerable and less secure, leading them to adopt a more home-centered existence. For others, however, a longer life expectancy combined with an early exit from the workforce means that will enjoy many years of good health and fitness. Others adopt a very active life to replace work - studying, doing voluntary work, joining clubs, and sitting on committees (Haddon and Silverstone 1996a). Yet others turn more to family, supporting their own adult children, looking after grand-children or even caring role for their own parents.

The telephone seems very important for this group. For the more active the phone becomes very significant for the management of their commitments and many have actually noted their dependency upon it. For the more home-centered, the phone is a significant for keeping in touch with family and friends. For widows and widowers, the phone can become very significant for social contact, especially with geographically dispersed adult children.

As regards ICTs, they are willing to accept fairly straightforward extensions of the familiar, such as modern or additional handsets

and some cordless phones. They also frequently possess multiple TVs, TVs with teletext, remote controls and VCRs. However the openness to incremental innovation does not extend to radically new ICTs, such as PCs. Although there are always some technology enthusiasts and those who have used ICTs while still at work.

Overall use of new ICTs depends not just on functionality but on how it is presented and packaged. Firstly, it should feel familiar. For example familiarity with the remote control means that more remote control devices in the home would not be alien. Secondly, it should be useful for their current activities. For example, many in this group travel frequently and use teletext and radio for travel information. New ICTs that relate to their increasing involvement in activities outside the home, for example in the community or in hobbies, are also likely to be accepted.

The older elderly

Across Europe the elderly population is growing, including the older elderly (75+). Although percentages vary, many of the older elderly are women and a substantial proportion lives alone. In general, older elderly people have limited income, especially the women, since they have benefited less from occupational pensions. Demographic and other factors have increasingly limited the number and availability of female relatives in their middle years that have traditionally cared for this age group (Cullen and Moran 1991). New and innovative policies will be needed to sustain care levels as this population grows.

However, various researchers and advocacy groups for the elderly have stressed that aging should not just be conceptualized in negative terms: as a problem. Living independently also involves a consideration of quality of life. Recently, greater attention has been given to assisting this age group, as well as the young elderly, to realize opportunities, to develop life interests and to contribute to the community. ICTs are often seen as having a role to play.

Reflecting the long-standing state interest in keeping the elderly in their own homes, the main technologies that have received

attention have been "aids to living", which enable the elderly to function and carry out daily routines in their home, and to medical and security related technologies. Examples include a range of low-level aids right up to home automation (Gann and Iwashita 1995) and remote medical monitoring and diagnostics, and personal alarms. Manufacturers of these specialized products have in part shown an interest in the elderly market because the costs of the products are often paid for by health insurance or welfare schemes (Mollenkopf 1993). Mainstream consumer electronics firms have been less interested in this market, in part because of the stigma associated with the elderly. In general, both the elderly themselves as well as their support groups have also had very limited involvement in actual product development (Mollenkopf 1993). Such groups have only recently begun to consider technologies that might facilitate socio-emotional support and social participation in the community, especially through telecommunications.

Overall, despite an emerging "silver market" across Europe, as the numbers of relatively affluent elderly expand, there are still considerable barriers at this age to accepting innovations. As for other groups, symbolism can be as important as functionality. Therefore, design, presentation and the strategies by which technologies are introduced are significant (Mollenkopf 1993). Above all there are concerns that applications such as teleshopping, telemedicine, telemonitoring could become technological fixes leading to a loss of human contact (Cullen and Moran 1991).

Health, impairment and disability

Health, impairment and disability issues are by no means unique to the elderly. Many elderly undergo merely a minor degradation of faculties, and the prospects for later cohorts of elderly appear even brighter to the extent that they led healthy lives when younger. However, within this age group there are many who are starting to experience health-related problems and lesser or greater degrees of impairment.[9]

Compare the situation of the young (i.e. pre-retirement age) disabled and the older, retired, disabled. For the young disabled, or those with a medical condition, work is still a consideration, and indeed there are attempts to use ICTs to enable them to participate in the labor force through teleworking (Haddon 1991). Of course there are a number of dilemmas with this "technological" solution to increasing disability. The first concerns the risk of social isolation. The second concerns the wider issue of whether they should be segregated in discrete and dedicated institutions or integrated into an able-bodied world. Also, employers would have to develop appropriate work practices to cater for disabled workers. But, there are advantages in teleworking that can make it appealing for some disabled, for those who have absolute mobility problems or for whom travelling to work is fatiguing. Teleworking also facilitates control over the layout of the work environment. One problem for disabled outside the home can be the positioning of the items with which they work. They might also be able to control the pace of work to suit their capabilities. In these cases, telework could be attractive if it allows the maintenance of social contact and facilitates distance learning.

For disabled people who are retired work is not an issue, but social isolation and participation are. As noted in the discussion of the young elderly, given the chance many lead active lives and engage with the outside world, friends and family. Can new ICTs, especially communications technologies, play a role here? Within the home that intelligent home systems can supplement existing technologies to provide "aids to daily living" (Gann and Iwashita 1995). Various forms of alarms to provide a sense of security as well as help in emergencies and ICTs to monitor medical conditions have also received some attention. On the other hand, to the extent that any such aids symbolize dependency, they are sometimes resisted (Haddon and Silverstone 1996a). Even here, it is important to look to questions of functionality and usefulness and to ask what ICTs mean to people, as well as to be sensitive to how they are represented to those who might make use of them.

Finally, can new ICTs and services need to be designed in such a way that they do not actually create barriers to use for those with impairments? "Inclusive design" sets out to be usable by as many people as possible (Barker et al 1995). It avoids designing in barriers to people with impairments. In fact, it is argued that sensitivity to the requirements of those with disabilities can produce design solutions to benefit everyone. For example, many people with reasonable sight may tolerate poor lighting. But, they too may benefit lighting adapted for the extra requirements of people with poorer vision. Similarly, with ICTs, design improvements could clearly be made in graphical displays or programming controls (e.g. on heating systems).

It is of course important to note that the experience of these groups, especially those defined by their age or stage in the life cycle is varied (Haddon and Silverstone 1996a, Buchner 1970, Meyer and Schulze 1994). Values, competence and needs change depending on past experiences with technology. Thus, generalizations across cohorts or predictions about the behaviour of future cohorts on the analysis of present ones are risky unless attention is given to the skills and expectations that different groups carry with them as they move through life.

Household composition

Apart from research on the elderly and ICTs (Kordey 1993, Wald and Stückler 1991 on the telephone; Williamson 1994, Tulloch 1989, Randell 1990 on TV) the vast majority of research on the consumption of domestic ICTs has been on nuclear families. Despite the fact that, in northern Europe at least, they now constitute a minority of all households. Even surveys which segment the market at different points in the life course (e.g. Dordick and LaRose, 1992) often assume a progression through a nuclear family stage. This does not do justice the diversity of household forms, each with their own dynamics, which people can experience at some point in their lives. Attention to this diversity is increasing precondition for research in this field.

We can point to one UK study of lone parent households as one of the few attempts to look at other forms of household and try and

understand the particular ways in which ICTs become, or do not become, part of everyday life (Haddon and Silverstone 1995). In the UK 1 in 7 children live in lone parent families at any one moment while a third of all children are part of a lone parent household at some time in their childhood. These patterns of course reflect a more general break-up and re-formation of both partnerships and families (Bradshaw and Millar 1991). Although not all have a low income, many, usually female, lone parents live on social security payments and/or part-time work. They form a substantial portion of all households classified as poor. This relative and absolute poverty is related to household composition as a consequence of the costs and constraints of childcare without the daily support of a second parent. There are, sometimes, positive dimensions to this experience. Lone parents are relatively free, within their own homes, of the conflicts and the compromises of an unsatisfactory relationship. However, the absence of a second adult can create particular constraints, demands and household dynamics. For example, many lone parents describe feeling trapped at home in the evening because there is no one else to look after the child. And organizing the logistics of child management, such as getting someone to pick a child up from school, can be more complicated for just one parent. As a group they can be seen to have a potentially high demand for ICTs, but rarely sufficient resources to acquire them. For example, the phone is a vital social lifeline for many lone parents trapped in the home, and it can, and often does, take on great significance as a tool for organizing and coping with daily life. One might ask what other ICTs could have a similar role. Indeed, the mobile phone has been mentioned as an aid to checking up on, and organizing, children (Rakow and Navaro 1993). TV can also play a more significant role for lone parents than households with partners in the sense of providing companionship, filling time and occupying children when there is no other parent to do so. ICTs already have, both actually and potentially, a significant role in such households, yet it is becoming increasingly clear that the costs of access are likely to prohibit anything but the most basic levels of access.

Two more general points can be made about household composition. First, its fluidity (Haddon 1995c), for example, where a family has broken up, children can find themselves spending time in more than one household. In the case of lone parents, on occasions when the children are visiting the other parent, their homes do become, for a time, single-person households. Where both parents find new partners bi-nuclear families are created, and the number of children present at any one time in these households will vary depending on the domestic arrangements between previous partners. Finally, in such a household adults may have only a part-time presence: as when some lone parents spend weekends or part of the week in the home of a boy or girlfriend.

Children, or indeed adults, spending time in two different households therefore are highly likely to experience different rules and regulations, or different regimes of access to ICTs. One parent in one household will allow the children to watch particular TV programs while the other, in a second household, prohibits such viewing. Access to new technologies will, similarly, vary. Travelling between homes may mean that equipment will be duplicated in the different households or carried between them. The second point is that household composition is dynamic: people pass through different types of household at different points in their life. Most of us experience living alone at some point in our lives. There are the years which couples spend together after their children have left. Transitions between households can be both traumatic and involve major readjustments, many of which can involve new demands on ICTs. For example, for lone parents the phone often takes on a crucial role as a lifeline to supporting networks in the period immediately after the dissolution of a relationship and the resulting upheaval. There are clear implications here for both niche and mass markets for ICT. Above all there is a need to recognize how markets change with the ICT experiences of different cohorts and demographic evolution.

Households and the Outside World

The relationship between home and work

ICTs have become central both in the mediation of private and public worlds as well as changing the boundaries between them. Here again there are interrelated dynamics of social and technical change, which have to pursue its implications for ICTs' role in everyday life. In this regard, the workplace is important not just as place for learning skills relating to new technology, but as somewhere where new ICTs and services gain a general visibility. Even if they are not used personally by particular staff, they become familiar. It is possible to appreciate their usefulness and drawbacks. One learns to feel at ease with them in that setting, just as the young elderly became used to the phone in part through work. Thus, for the unemployed (but also for those caring for children at home or the retired elderly) the absence of work can mean the absence of contact with a whole range of ICTs. Once again there is the possibility of exclusion from the Information Society.

It also follows that the commitment to paid employment outside the home will shape the amount of time available to use PCs, watch television or otherwise participate in other ICT-based leisure activities. It will have a bearing, too, on when people can be contacted by phone or are free to contact others. Moves to more flexible working hours, to shift-work in organizations operating a 24-hour day, and to telework all mean more varied times to access ICTs. Technologies such as the VCR and the answer phone have enabled people to cope better with being out of synchronization with more mainstream leisure times and we might speculate that these trends would make other "time-shifting" technologies increasingly attractive, ones which could deliver messages, information, entertainment on demand.

Finally we can point to the implications of changing patterns of work in the home, and especially, in addition to telework, to the growing number of second jobs and "overspill work" which is brought home as a result, often, of pressures within the formal working environment. Mobile work, too, often entails using the home as a base between being on the road and periodically returning to an employer's premises. Two consequences follow.

The first is that with work entering the household, the boundaries between home and work blur and therefore need to be more consciously managed: sometimes through the adoption of new ICTs, sometimes through changes in the patterns of use of existing ICTs. The second is that work brought home introduces ICTs into the home, which then find a domestic role. These last two points can be explored further through a case study of telework.

Case study: teleworking and ICT

There are many types of teleworking, and many experiences of the phenomenon. An executive or professional in control of their work and accessing distant databases is far removed from a low paid typist working at a home based word-processor, unsure when the next work will come and having to respond to clients at short notice. For some, telework is wonderful and provides great freedoms. For others it is a mere phase in their life that enables them better to manage their circumstances. For yet others it is perhaps the only viable option open to them (Haddon and Silverstone 1993).
Haddon and Silverstone (1993) have shown how work entering the home can change the experience of existing ICTs. The best example concerns the phone. Where a second work line is not justifiable, as in the case of some clerical self-employed teleworkers, the domestic phone takes on an additional role as a work tool and rules concerning its use have to be re-negotiated. Household members, including children, have to learn how to answer appropriately, or when not to answer at all. Issues arise over blocking social calls at times when they might prevent work calls arriving. And the whole sound regime of the home has often to be reviewed, with teleworkers deciding where the phone is to be re-located and controlling domestic background noise in an attempt to create a good impression of their working environment when dealing with calls from prospective clients and employers. This last example also provides an instance when ICTs can come to the rescue, as the answer phone, fax and e-mail all enable the control of communication, the protection of privacy and the display of status.[10]

Telework can also introduce new ICTs into the home, and the discovery of new domestic applications follows. Once in the home, teleworkers and other family members gain familiarity with the technology, might experiment and develop their competencies and awareness of its possibilities. Apart from finding new uses for computers, innovative practices include using a home-based fax machine to contact distant relatives and the photocopier for school projects. Teleworking households, then, may not necessarily be early adopters of future leisure-oriented ICTs, but they are more likely to be early adopters of those which have a work-dimension and therefore are significant in the discovery of their domestic applications.

Families, networks, communities and mobility

There has been a general increase in social and geographical mobility in the latter half of this century. Its consequences have long been noted by British researchers examining the transformation of inner-city traditional working-class communities (Young and Wilmott 1957). Meanwhile German research on the unemployed has charted those historical changes which have led to new patterns of geographical settlement: namely suburbanization and the break up of local working class communities (Hu?ermann and Petrowsy 1989, cf. Williams 1974, Silverstone 1997a). Migration from country to country, as well as from city to suburb and to rural locations has involved the progressive fracturing of established communities and networks and led to increasing isolation, particularly of the elderly (Meyer and Shultz 1995).
Of course it needs to be recognized that community formation is an on-going process. New communities form, maybe different in nature from previous ones, when people move to a new area. Meanwhile, despite a decline for many in the intensity of face-to-face contact it must also be remembered that much interaction is often maintained, even though people are now located at a greater distance from each other. The cars, public transport and, perhaps principally, the telephone have helped maintain social links despite geographical dispersal, within extended families and

across generations. This has contrary implications for any new media in a similar role, since any substitution will have to demonstrate substantial advantages if it is to shift deeply engrained habits and skills.

Unpaid commitments outside the home, for example "voluntary work" can also have a role in the diffusion of ICTs, for all generations including the young (Büchner 1990). Such activities include administration and other forms of production. For example, PCs used to word-process school reports, desk top publishing tickets for sports matches, up-dating records of hobby groups, or handling official correspondence on behalf of clubs; or using the telephone to organize outings and other events, arranging speakers and players or calling meetings (Haddon 1995c). In these situations ICTs enhance the capacity of individuals to function in non-home environments, although later uses in, and for, the home may follow, as in the case of telework. This potentially important route for ICTs into the household is often neglected.

Community has become a buzzword in discussions of the Information Society. Information and communication technologies are often seen, yet again, a panacea. They are seen to offer, through their various electronic networks, the opportunity for communities to be created and as a result for otherwise marginalized and disenchanted citizens to reclaim their rights to participate in an energized and revitalized public sphere (cf. Reingold 1994).

Research has begun to confront these often utopian fantasies, both from the point of view of the limits of the electronic version of community (Aufderheide 1992) and from the point of view of their role, in supporting existing "real" ones (Hollander and Stappers 1992). UK research on teleworkers (Haddon and Silverstone 1993) has identified the various ways in which social networks emerge, or are reinforced, to compensate for threats to, or the loss of, community (a work community) that can accompany the move to teleworking.

Yet community and communities must be a central focus of attention. The capacity of broadcasting in its hey-day to create a

sense of national community (Scannell and Cardiff 1991) building on the role the press before that had in "constructing" community (Anderson 1983) is well established even if it is sometimes exaggerated and romanticized. New ICTs, especially based around the Internet, clearly offer a number of different routes to, and ways of, creating networks that could be considered communities, especially in so far as they sustain informal and real time communication between the like minded, albeit on a global rather than a local scale. How far these networks are in any sociological sense communities is of course the open question. Can they survive and contain conflict? What mechanisms do they have to survive beyond the lives of any individual participant? How can they be sustained given the electronical capacity to participate in the network without ever declaring ones "true" identity? How can they be effective given inevitable constraints on access? These are questions that have yet to be answered.

On the other hand shared interest is clearly the basis for new electronically mediated communities to form. Bulletin boards and buddy lines can be seen to provide the mechanisms for, as well as being the product of, attempts to create alternative communities based around a single interest. Correlatively, existing communities, based in a shared culture or ethnicity can be seen to be being reinforced by and through distinct appropriation of the products of mass culture or new forms of media delivery (Gillespie 1995). Here it is possible to point to the role ICTs may have in strengthening existing communities both by providing cultural resources for shared activities which would enable the construction of distinct identities (Miller 1992) as well as offering a new infrastructure for its on-going support.

Finally, to the issue of mobility and to role of mobile technologies in everyday life. Here once again there is little published research to draw on. It is possibly only to make a few general and intuitive observations. Even in relation to work, mobility and mobile ICTs appear in several guises. The growing number of full-time mobile workers and those who move between sites and meetings for some of the time are increasingly supported by mobile communications and mobile PCs. Work-related commuting has also led some

professionals to utilize mobile ICTs to make more productive use of travelling time. Meanwhile "overspill" work brought home to complete after the working day may make use of portable ICTs, such as laptop PCs, which can be brought from the workplace. We noted earlier in the discussion of telework that ICTs acquired for work are often used for non-work purposes and certainly some research suggests that the early use of mobile phones for work purposes helped to open up one route to a mass consumer market (Wood 1993).

Leisure activities are also increasingly being supported, or indeed disturbed, by mobile ICTs as public spaces are occupied by private individuals converting what is generally public to something immediately private through their connection to Walkman or mobile telephone. In this context the car, much ignored too in ICT research, is significant as being more than just a vehicle or mode of transport. Its ICT infrastructure, in-car entertainment, mobile phone, and perhaps passengers with their personal stereo or mobile hand-held games console, helps this mobile space to become an extension of the home environment. Similarly, the portability of such ICTs enables people to set up their own supporting technological infrastructure, to extend home and customize new space when they are away: be it on holiday, in second homes or spending time in different households.

Even though we do not yet have a framework for evaluating the social and cultural implications of such developments, we can at least ask whether in some sense these developments might in the longer term create new forms of dependency. Do we develop a greater sense of security though being able to carry with us what is familiar, and specifically with mobile communications, to reach out and contact others at any moment?   Do we use what is otherwise relatively unproductive travel time more intensely because it is possible to carry this infrastructure around with us? More specifically, do mobile communications create new forms of surveillance as employers or families expect phone carriers to be continuously contactable and to maintain a link with home or the workplace? On the other hand, do mobile phones support new just-in-time lifestyles which will enable us to cope with stress by

enabling us to organize lives while on the move. There are a number of key issues here that demand further research.

Household resources: the new haves and have-nots

Concerns have been voiced about a two-tier Information Society (e.g. CEC1994a). Existing elites and professional classes would have almost limitless access to all that ICTs can offer. Those at the margins (the unemployed, lone-parents, the elderly, the ethnically oppressed, the regionally distant, the rural) will find it increasingly hard to gain the resources necessary (even with falling costs of entry) to access the new technologically driven and increasingly technologically dependent culture. Yet voicing concern is only part of the story. Very little research has been conducted which addresses these issues directly. And considerations of disadvantage, when they are visible tend to be limited to issues related to the lack of financial resources. To be sure the elderly and the disabled are potentially disadvantaged groups are increasingly being, targeted as likely to benefit from new ICTs. But the approach is based on the assessments of physical and material needs rather than cultural values and competencies. As a result innovation is technologically driven rather than being sociologically sensitive.

The new forms of disadvantage are highlighted in a German study (Hu?ermann and Petrowsy 1989), which demonstrates the important of the phone for the unemployed in suburban settings. These writers note the greater consumer-oriented lifestyle, greater dependence on the market and hence greater dependence on income from formal employment (as opposed to what households could self-produce). At the same time, in a parallel way to the arguments about children, the unemployed are also more likely nowadays to move in social networks at some distance from them and based on common interests and lifestyle rather than neighborhood.

Under conditions of long term mass employment, informal networks and active job seeking by the unemployed are becoming more significant routes to finding work than attendance at job centerss. The phone helps job seekers to stay within social

networks. Work opportunities are often identified by personal acquaintances should a vacancy occur. Informal inquiries can be made and the job seeker is contactable by potential employers. The phone is also important for sorting out pensions and other benefits and finding out what documentation to bring to social security interviews. Meanwhile the phone can be vital in managing to get employment in the informal economy for the quasi self-employed. On the consumption side, the phone can help in finding out about special offers when trying to manage on a reduced income. It can help as a psychological support, especially given the greater stigma that has accompanied the break up of supporting communities and the individualized experience of unemployment. Finally, the phone is as important for the unemployed as anyone for setting up meetings. They may have time to spare, but they must synchronize it with others and plan their time. It is often via the phone that people are invited to social events such as coffee gatherings, sports or family celebrations. Without one it is easy to drop out of society.

This study has a wider salience. The researchers make the general point that while the phone has enabled geographical relocation and new forms of social networking, it has at the same time become a necessary condition for maintaining these networks and patterns of contact. The more widespread the phone has become, the more difficult it is to be without one. The authors argue that the phone is nowadays important for citizenship, and make a case for the state provision of phones and perhaps some state support for the costs of usage.

This is an important study and it raises a much wider range of issues that extend both beyond the phone as an increasingly essential technology as well as beyond the particular circumstances of the unemployed. A recent study of lone parents (Haddon and Silverstone 1995, Silverstone 1994a) dramatically brought to light the unavailability for many of anything beyond the most basic information and communication technologies. There is also economic stress engendered by maintaining even a basic level of electronic access to mass culture, information services and social networks. Beyond economic or financial

disadvantage there is the risk of a wider and even more significant exclusion from participation in contemporary society.

Lack of economic resources is of course a crucial determinant of exclusion in an increasingly market based society - and this will become increasingly punitive in societies where commitments to universal access in telephony, and public service in broadcasting are being weakened daily. Nevertheless disadvantage has to be measured culturally as well as economically. It requires an assessment of the skills and competencies, and the espousal of particular values needed to enable individuals to become full members of a society whose structures and supports are increasingly electronically mediated.

This raises two kinds of questions. The first is whether there are technologies that are likely to assume the same kind of essential status. Essential that is both to person to person, and person to institution, communication as well as essential for the gaining of the information necessary for effective action and participation in society as a whole. For example, networks like the Internet may become a major way to access work or education. Not to have access, or not to have the ability to access, such networks, would be a disadvantage. If cable companies offering free or cheap calls or other messaging systems in the local area resulted in community services being offered through these channels, to be unable to afford access to cable would be to be excluded.

The second questions focus on the particular problems faced by distinct social groups - problems of such scale and chronic intensity that ICTs are never even close to being seen as relevant to their circumstances. For example in study of lone parents (Haddon and Silverstone 1995) it became clear that limited income often meant that anything beyond very basic ICTs such as the phone or television was beyond the horizons of many lone parents. Their entire preoccupation was with the struggle to survive. A struggle that involved the provision of basic shelter and nourishment as well the maintenance of basic social needs. Even those who able to create a home, a personal space for their family, and a sustained participation both in social networks and leisure

activities outside the home, had a minimal interest in, or awareness of, the Information Society, and perhaps justifiably so. In these cases, even the improbable capacity of governments to underwrite or subsidize access to the electronic culture is unlikely to be sufficient to enable the disadvantaged to participate. With priorities lying elsewhere, and basic skills and competencies being denied to them, they are going to need much more by way of incentive and support than merely financial inducements. And equally it should be pointed out that for such groups participation in contemporary culture is as much a function of their ability to access a wide range of television programs and channels as it is to access an information service. The capacity to discuss what was seen last night on television is as important a route into society as the ability electronically to access information offered by the local social services.

Conclusions and consequences

End-user and social aspects the Information Society are increasingly recognized in policy statements (see for instance the discussion by Ducatel, Webster and Herrmann in the introduction to this book). But the implications of that recognition are rarely discussed and there is little consideration given either in policy or research as to how to alter the situation. This problem is likely to persist until we have developed a more mature understanding of the social and cultural factors that currently affect the use of ICTs in everyday life. Above, we have to realize that the role of the domestic consumer is not just a passive one involving the resigned acceptance of innovation at the end a long process of technical development. On the contrary, policies and markets must actively engage users in the innovation process.

User "activity" is of course complex. It is the product of social and as well as psychological factors. It changes through time. It is a symbolic as well as a material process, involving judgements of status and aesthetics as well as usefulness and functionality. It is not determined by any single factor, and it is especially not determined by the mere availability of the latest gee-whiz ICT. This is difficult but essential.

The first major implication of these arguments is the need for more and better research. Although research and technological development programs now tend to acknowledge social and cultural factors in technological change, they still mostly separate such research from the core business of getting technical results. Likewise in policy development, access to, and participation in, the emerging Information Society is constrained by a complex array of social and cultural factors, not all of which are in turn are reducible to questions of material resources. The threats and realities of exclusion, on the basis of language and culture, ethnicity, location, age and gender, as well as disability, conspire to undermine any dreams of universal access or public service which must underpin any effective attempt to draw whole societies into a new age. Change is both slower than often anticipated and certainly more uneven. The reverse salients are human not technical. This suggests a need to underwrite innovation in key areas based on social policy objectives rather than leaving all to the leadership of the market. It also suggests that this subsidy should not ignore the extension of access existing forms of media, vulnerable to the spread of market forces, for example cable or satellite television. This is needed as well as access to technologically more advanced and, on the face of it, more socially necessary forms of information. It is clear too that resources will need to be found to provide public access, and once again not just access to public information sites. Electronic mail and cultural consumption, as well as market participation (virtual consumption) are key foci for the emerging Information Society, and many will be dependent on public kiosks or cybercafes for at least initial entry and participation.

It follows, finally, that those planning new electronic services will need to keep their heads. Technologies change faster than people. There is little in the way of demonstrated need for such new forms of consumption, and for many both physical access as well as personal competence will, notwithstanding the staggering growth of Internet access, keep such markets fragile and uneven (Silverstone 1997b).

References

Anderson, B. (1983) *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, Verso, London

Ang, I. (1985) *Watching 'Dallas'*, Methuen, London

Aufderheide, P. (1992) 'Cable Television and the Public Interest', *Journal of Communication*, 42 (1) 52-65

Aune, M. (1992) Datamaskina I hverdagslivet. En studie av brukeres domestisering av en ny teknologi, hovedoppgave, University of Trondheim, Trondheim

Barker, P., Barrick, J. and Wilson, R. (1995) *Building Sight*, HMSO, London

Berg, A. (1990) 'He, She and I.T. Designing the Home of the Future', in Sorensen, K. and Berg, A. (eds.) *Technology and Everyday Life: Trajectories and Transformations,* Norwegian Research Council for Science and Humanities, Trondheim

Berg, A. (1994a) Technological Flexibility: Bringing Gender into Technology, in Cockburn, C. and Fürst Dilic, R.(eds*) Bringing Technology Home: Gender and Technology in a Changing Europe*, Open University Press, Buckingham

Berg, A. (1994b) '*The Domestication of Telematics in Everyday Life'*, paper presented at the COST 248 Workshop: 'The European Telecom User', April 13-14th, Lund, Sweden

Bourdieu, P. (1986) *Distinction: A Social Critique of the Judgement of Taste*, Routledge and Kegan Paul, London

Bradshaw, J. and Miller, J. (1991) *Lone Parent Families in the UK*, Department of Social Security Research Report No.6, HMSO, London

Büchner, P. (1990) 'Das Telefon im Alltag von Kindern', in Forschingsgruppe Telefonkommunikation, *Telefon und Gesellschaft*, Vol.2, Volker Spiess, Berlin

Cawson, A., Haddon, L. and Miles, I. (1995) *The Shape of Things to Consume: Bringing Information Technology into the Home*, Avebury, London

Christoffersen, M.(1994) *User Needs and Telecommunication Service Provision in Denmark*, paper presented at the International Working Conference on Home Orientated Informatics, Telematics and Automation, Copenhagen, June 27th-July 1st

Cockburn, C. (1992) 'The Circuit of Technology: Gender, Identity and Power' in Silverstone, R. and Hirsch, E. (eds.) *Consuming Technologies: Media and Information in Domestic Spaces*, Routledge, London

Coutras, J and Lascade, J. (1995) *Smart House et Domus: Deux Notions et Deux Logiques Compatibles?,* paper presented at the second EMTEL Workshop: November 10-11th, 1995, Amsterdam Cullen, K. and Moran, R.(1991) *Technology and the Elderly: The Role of Technology in Prolonging the Independence of the Elderly in the Community Care Context*, Work Research Centre and Ekos, FAST report FOP 295, Dublin.

Cowan, R.(1998) *More Work for Mothers*, 2nd edition, Free Associations, London.

Dordick, H. and LaRose, R. (1992*) The Telephone in Daily Life: A Study of Personal Telephone Use*, Temple University, Philadephia

Douglas, M. and Isherwood, B. (1980) *The World of Goods: Towards and Anthropology of Consumption*, Penguin, Harmondsworth

Douglas, S. (1986) 'Amateur Operators and American Broadcasting: Shaping the Future of Radio', in Corn, J.(ed.), *Imagining Tomorrow: History, Technology, and the American Future*, MIT Press, Cambridge, Mass.

Dutton, W. (1995) 'Driving into the Future of Communications. Check the rear View Mirror', in Emmott, S.(ed) *Information Superhighways: Multimedia Users and Futures*, Academic Press, London

EMTEL (The European Media Technology and Everyday Life Network) (1995) *The User/Producer Interface, A Framework Paper*, University of Sussex, Falmer

Featherstone, M. (1991) *Consumer Culture and Postmodernism*, Sage, London

Forty, A. (1986) *Objects of Desire: Design and Society 1750-1980*, Thames and Hudson, London

Gann, D. and Iwashita, S. (1995) *'Housing and Home Automation for the Elderly and Disabled'*, Science Policy Research Unit, University of Sussex, Falmer, October

Gerbner, G et al. (1986) 'Living with Television: The Dynamics of the Culturation Process' in Bryant. J and Zillman, D. (eds.) *Perspectives on Media Effects*, Lawrence Erlbaum, Hilside N.J.

Gillespie, M. (1995) *Television, Ethnicity and Cultural Change*, London, Routledge

Golding, P. (1990) 'Political Communication and Citizenship: The Media and Democracy in an Inegalitarian Social Order' in Ferguson, M. (ed.) *Public Communication: The New Imperatives*, Sage, London

Gray, A. (1992) *Video-Playtime: The Gendering of a Leisure Technology*, Routledge, London

Group of Prominent Persons, (1994) *Europe and the Global Information Society: Recommendations to the European Council*, Industrial Group of Prominent Persons, Brussels

Haddon, L. (1988) 'The Home Computer: The Making of a Consumer Electronic', in *Science as Culture*, No.2

Haddon, L. (1990) 'Researching Gender and Home Computers' in Sørensen, K. and Berg, A. (eds) *Technology and Everyday Life: Trajectories and Transformations*, University of Trondheim, Trondheim

Haddon, L. (1991) *Disability and Telework*, British Telecom Laboratories, Martlesham

Haddon, L. (1992) 'Explaining ICT Consumption: The Case of the Home Computer', in Silverstone, R. and Hirsch, E. (eds.) *Consuming Technologies: Media and Information in Domestic Spaces*, Routledge, London

Haddon, L. (1993) 'Interactive Games' in Hayward, P. and Wollen, T. (eds.) *Future Visions: New Technologies on the Screen*, British Film Institute Publishing, London

Haddon, L.(1995a) 'The Home of the Future Today: The Social Origins of the Intelligent Home' in Esser, J., Fleischmann, G. and Heimer, T.(eds) *Soziale und Ökonomische Konflikte in Standardisierungsprozessen*, Campus, Frankfurt/Main

Haddon, L.(1995b) *Home Automation: Research Issues*, paper presented at the second EMTEL Workshop, November 10-11th, 1995, Amsterdam

Haddon, L.(1995c) *Information and Communication Technologies: A View from the Home*, paper for the PICT International Conference on the Social and Economic Implications of Information and Communications Technologies, Westminster, London, 10-12th May

Haddon, L. and Silverstone, R. (1993) *Teleworking in the 1990s: A View from the Home*, SPRU/CICT Report Series, No. 10, University of Sussex, August

Haddon, L. and Silverstone, R. (1994) 'The Careers of Information and Communication Technologies in the Home', in Bjerg, K. and Borreby, K. (eds.) *Proceedings of the International Working Conference on Home Oriented Informatics, Telematics and Automation*, Copenhagen, June 27th-July 1st

Haddon, L. and Silverstone, R. (1995) *Lone Parents and their Information and Communication Technologies*, SPRU/CICT Report Series, No.12, University of Sussex, January

Haddon, L. and Silverstone, R. (forthcoming) *The Young Elderly and their Information and Communication Technologies*, SPRU/CICT Report Series, University of Sussex.

Haddon, L. and Skinner, D. (1991) 'The Enigma of the Micro: Lessons from the British Home Computer Boom', *Social Science Computer Review*, Fall, Vol.9, No.3

Häußermann, H. and Petrowsky, W. (1989)"Die Bedeutung des Telefons für Arbeitslose", pp.116-134 in Lange, U. (ed) Telefon und Gesellschaft, Vol.1, Volker Spiess, Berlin.

Hollander, E. and Stappers, J. (1992) 'Community Media and Community Communication' in Jankowski, N., Prehn, O. and Stappers, J. (eds.) *The People's Voice: Local Radio and Television in Europe,* John Libbey, London

Huws, U. (1993) *Teleworking in Britain: A Report to the Employment Department*, Research Series No.18, Employment Department, Sheffield.

Johnson, L. (1982/3) 'Images of Radio: The Construction of the Radio by Popular Radio Magazines, *Melbourne Working Paper No. 4*, Department of Education, University of Melbourne

Jones, S. G. (1995) *Cybersociety: Computer-mediated Communication and Community*, London, Sage

Jouet, J. (1991) 'A Telematic Community: The Axiens', in Jouet, J, Flichy, P. and Beaud, P. (eds.) *European Telematics: The Emerging Economy of Words*, North Holland, Amsterdam

Jouet, J, Flichy, P. and Beaud, P. (eds.) (1991) *European Telematics: The Emerging Economy of Words*, North Holland,Amsterdam

Jouet, J and Toussaint, Y. (1987) Telematics and the Private Sphere: The case of French Videotex, paper presented to Data Communication Conference, Université Libre de Bruxelles, May

Keen, B. (1987) 'Play It Again Sony: The Origins and Double Life of Home Video Technology', *Science as Culture*, No.1

Kordey, N. (1993) *Nutzung der Telekommuikation durch Ältere Menschen: Qualitative Studie in Ausgewälten Lebenslagen und Soziale Situationen*, Wissenschaftliches Institut für Kommunikationsdienste, Bad Honnef., No.117

Laczko, F. (1989) 'Between Work and Retirement: Becoming "Old" in the 1980s, in Bytheway, B. et al.(eds) *Becoming and Being Old: Sociological Approaches to Later Life*, Sage, London

Laczko, F. and Phillipson, C. (1991) 'Great Britain: The Contradictions of Early Exit', in Kohli, M.et al. (eds) *Time for*

Retirement: Comparative Studies of Early Exit from the Labor Force, Cambridge University Press, Cambridge

Lyon, D. (1988) *The Information Society: Issues and Illusions*, Polity Press, Oxford

Martin, M. (1988) 'Rulers of the Wires? Women's Contribution to the Structure of Communication', *Journal of Communication*, Vol.12, No.3

Marvin, C. (1988) *When Old Technologies Were New: Thinking about Communications in the Late Nineteenth Century*, Oxford University Press, Oxford

McCracken, G. (1990) *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities*, Indiana University Press, Bloomington

McNeil, M. (1987) 'It's a Man's World,' in McNeil, M.(ed.), *Gender and Expertise*, Free Association Books, London

Meyer, S. and Schulze, E. (1995) *Smart Home in the 1990s: Acceptance and Future Usage of Private Households in Europe*, paper presented at the second EMTEL Workshop: November 10-11th, 1995, Amsterdam, The Netherlands

Miller, D.(1987) *Material Culture and Mass Consumption*, Blackwell, Oxford

Miller, D. (1992) '"The Young and the Restless" in Trinidad: A Case of the Local and the Global in Mass Consumption' in Silverstone, R. and Hirsch. E. (eds.) *Consuming Technologies: Media and Information in Domestic Spaces*, Routledge, London

Mollenkopf, H.(1993) Technical Aids in Old Age: Between Acceptance and Rejection, Arbeitsgruppe Sozialberichterstattung

P93-106, Wissenschaftscentrum Berlin für Sozialforschung, Berlin.

Moores, S. (1988) '"The Box on the Dresser": Memories of Early Radio and Everyday Life', *Media, Culture and Society*, Vol.10, No.1

Morgan, M. and Signorelli, N. (eds.) (1990) *Cultivation Analysis: New Directions in Media Effects Research*, Sage, London

Morley, D. (1986) *Family Television: Cultural Power and Domestic Leisure*, Comedia, London

Morley, D. and Silverstone, R. (1990) 'Domestic Communication - Technologies and Meanings', *Media, Culture and Society*, Vol.12, No.1

Moyal, A. (1989) 'The Feminine Culture of the Telephone. People, Patterns and Policy.', *Prometheus*, Vol.7, No.1, June

Nissen, J. and Riis, U, (1989) *Computer Captivated Youth: A Swedish Picture*, paper presented at the conference 'Children in the Information Age', Sofia, Bulgaria, May

Presvelou, C. (1986) *Households, the Home computer and Related Services in the Netherlands: Attitudes, Trends and Prospects,* University of Wageningen, FASR report No.95

Punie, Y. (1995) '*Media use on the Information Highway: towards a new consumer market or towards increased competition to win round the consumer'*, paper for the PICT International Conference on the Social and Economic Implications of Information and Communications Technologies, Westminster, London, 10-12th May

Rakow, L. (1988) 'Women and the Telephone: The Gendering of a Communications Technology', in Kramerae, C.(ed.) *Technology and Women's Voices*, Routledge, London.

Rakow, L. and Navaro P. (1993) 'Remote Mothering and the Parallel Shift: Women Meet the Cellular Phone', *Critical Studies in Mass Communication*, Vol.10, No.2, June

Randell, E. (1990) 'Switching on at 60-plus', in Willis, J. and Wollen, T.(eds) *The Neglected Audience*, BFI, London

Reingold, H. (1994) *The Virtual Community*, Secker and Warburg, London

RMDP (1989) *Home Automation: Will the Public Buy It?,* Brighton

Robins, K. and Cornford, J. (1990) *The Soft Machine: the New Technological Context of Consumption*, paper given at the workshop on Domestic Consumption and ICTs, Brunel University, May 18-19

Scannell, P. and Cardiff, D. (1991) *A Social History of British Broadcasting, Vol.1 1922-1939*, Blackwell, Oxford

Shotton, M.(1989) *Computer Addiction: A Study of Computer Dependency*, Taylor and Francis, London

Silverstone, R. (1991) *Beneath the Bottom Line: Households and Information and Communications Technologies in an Age of the Consumer*, PICT Policy Research Papers 17, Swindon, ESRC

Silverstone, R. (1994) *Television and Everyday Life*, Routledge, London

Silverstone, R. (1994) *Future Imperfect - Media, Information and the Millennium*, PICT Policy Research Paper No.27, ESRC, Swindon

Silverstone, R. (1995) 'Media, Communication, Information and the 'Revolution' of Everyday Life', in Emmott, S. (ed) *Information Superhighways: Multimedia Users and Futures*, Academic Press, London

Silverstone, R., Hirsch, E. and Morley, D. (1992) 'Information and Communication Technologies and the Moral Economy of the Household', in Silverstone, R. and Hirsch, E. (eds.) *Consuming Technologies: Media and Information in Domestic Spaces,* Routledge, London

Silverstone, R. and Haddon, L. (1993) *Future Compatible? Information and Communications Technologies in the Home: A Methodology and Case Study*, a report prepared for the Commission of the European Communities Socio-Economic and Technical Impact Assessments and Forecasts, RACE Project 2086, SPRU/CICT, University of Sussex

Skinner, D. (1994) 'Computerised Homes: Visions and Realities', in Bjerg, K. and Borreby, K. (eds.) *Proceedings of the International Working Conference on Home Orientated Informatics, Telematics and Automation*, Copenhagen, June 27th-July 1st

Skirrow, G. (1986) '"Hellivision": An Analysis of Video Games', in McCabe, C.(ed.) *High Theory/Low Culture*, Manchester University Press, Manchester

de Sola Pool, I. (1977) *The Social Impact of the Telephone*, MIT Press, Cambridge.

Sørensen, K. (1994) *Technology in Use: Two Essays on the Domestification of Artefacts*, STS-Arbeldsnotat 2/94, Centre for Technology and Society, University of Trondheim, Trondheim

Spigel, L. (1992) *Make Room for TV: Television and the Family Ideal in Postwar America*, University of Chicago Press, Chicago

Thrall, C. (1982) 'The Conservative Use of Modern Household Technology', *Technology and Culture*, Vol.23, No.2

Tulloch, J. (1989) 'Approaching the Audience: The Elderly, in Seiter, E. et al.(eds) *Remote Control: Television, Audience and Cultural Power*, Routledge, London

Turkle, S. (1984) *The Second Self: Computers and the Human Spirit*, Granada, London

Turkle, S. (1988) 'Computational Reticence: Why Women Fear the Intimate Machine', in Kramerae, C.(ed.) *Technology and Women's Voices*, Routledge, London

Wald, R. and Stöckler, F. (1991) *Telekommunikation und Ältere Menschen*, Wissenschaftliches Institut für Kommunikationsdienste, Bad Honnef, No.62

Williamson, K. (1994) '*Drinks on the Phone at Five O'Clock: Telecommunication and the Information and Communication Needs of Older Adults*, Royal Melbourne Institute of Technology, Melbourne

Winner, L. (1989) 'Mythinformation in the High-Tech Era, , in Forester, T.(ed.) *Computers in Human Context: Information technology, Productivity and People,* Basil Blackwell, Oxford

Winston, B. (1989) 'The Illusion of Revolution', in Forester, T.(ed.) *Computers in Human Context: Information Technology, Productivity and People*, Basil Blackwell, Oxford

Wood, J. (1993) *Cellphones on the Clapham Omnibus: The Lead-Up to a Cellular Mass Market*, SPRU CICT Report No.11, University of Sussex, Falmer, November

Young, M. (1990) 'The Future of the Family', The First ESRC Annual Lecture, ESRC, Swindon

Young, M. and Wilmott, P. (1957) *Family and Kinship in East London*, Routledge and Kegan Paul, London

1. Much of the social shaping literature has concerned itself with the process of design and production, arguing against a technologically determinist position from the perspective of the institutional and wider social processes that define and frame how a new technology will appear. The inevitable consequence has been to downplay or entirely ignore the continued shaping of technology in use (Cockburn 1992).

2. The stress on the consumer is one that is increasingly being shared by the ICT industry. Policy makers are also beginning to recognize that taking the consumer into account at an early stage is essential in the research and development of new technologies and services as well as at the point of market launch. There are a number of reasons. Rising competitiveness in less regulated markets (for example in telecommunications). The struggles of a converging industrial structure to define a new market (for example in multimedia). An increasing fragmentation of consumer tastes in a market that is both expanding and changing rapidly (a shift across the sector from hardware to software and services).

3. While the data for other European countries may vary, it is likely that many of the trends will have a more general validity.

4. See on radio (Douglas 1986, Forty 1986), on TV (Spigel 1992), on the telephone (de Sola Pool 1977, Marvin 1988), on the VCR (Keen 1987), and on the computer (Haddon 1988, Skinner 1994).

5. For a discussion of the household as a "moral economy" and its relevance to the consumption and use of ICTs, see Silverstone 1994b. See also other research on ICTs, such as home computers and Minitel in Norway (Lie and Sorenson 1996, Aune, M. 1992, Berg 1994a 1994b). This form of analysis sensitizes researchers to themes that they might investigate when exploring how a new ICT might be perceived, received or resisted and to household conflicts that might emerge from it.

[6] See: for the UK, Haddon 1995a 1995b Haddon 1988, Haddon and Skinner 1991, Skinner 1994, on the Netherlands, Presvelou 1986, Nissen and Riis 1989, on Sweden, on Norway Aune 1992, and on France Jouet et al 1991

7. In Philips' launch of CD-i, staff, advertisers, retailers and supporting magazines presented the product in different ways and for different motives (Silverstone and Haddon 1993).

8. For example, all Danish audiotext services were shut down because of a public outcry about sex hotlines (Christoffersen 1994). British Telecom at one point ejected some users because of fears that political issues being discussed on their network might provoke adverse media publicity (Cawson et al 1995).

9. Disability is a continuum, only 10 per cent of registered blind are totally without sight.

10. Haddon and Silverstone (1993) found that many self-employed teleworkers, especially professionals, would use the answer phone, or answering services specifically to create an impression of working from an office, or to disguise the fact that they were not, for fear of losing their credibility as either client or consultant.